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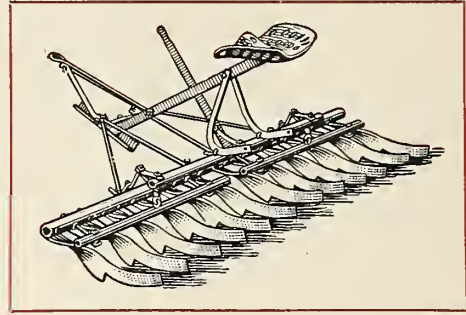
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# BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST  
OF UP-TO-DATE, PROGRESSIVE FRUIT GROWING AND MARKETING

## A PRACTICAL ESSAY ON PRUNING FRUIT TREES

THE writer has been impressed when visiting the various fruit districts of the state, by the lack of knowledge on the part of many growers of the requirements of young trees. No doubt a large majority of our fruit growers come to the state with no experience in the business and so have everything to learn, and surely no part of orchard management is more important than to start the young trees just right. On this depends not only the future usefulness of the orchard but in many instances large numbers of young trees fail to live through the first season for the simple reason that the trees were not properly started. In several instances the Experiment Station has been asked to investigate the cause of the dying of newly planted trees, and on visiting the orchard it was found that the trees were planted just as they had been received from the nursery. No doubt some of them had been injured somewhat by exposure and improper care but with the best of treatment it is difficult for the mutilated root system of a transplanted tree to establish itself and at the same time support a vigorous or overgrown top.

It is not generally realized that when a tree is taken from the nursery row, a large portion of the root system is left in the ground. The balance between the roots and the top is thus destroyed and obviously a part of the top should be removed. Practically all of the elements which nourish and build up a tree, save one, are taken from the soil by the roots in liquid form. This material is carried in the cell sap mostly through the outer sap wood to the leaves. Here the crude food is changed by the influence of the sunlight and the green substance of the leaves to a form that can be readily assimilated by the plant. This will illustrate, briefly, how important the roots are to a plant. Much of this elaborated food may be stored in the cells, especially in the fall, to be drawn upon at any time that the roots fail to supply the requisite amount. In transplanting, the nursery tree is often deprived of one-half or more of its roots, and not only must it become established in the soil but it must produce a large number of new roots before much new food can be supplied. In the meantime the leaves begin to push out and the reserve food and moisture may all be used before the root system is in a condition to supply more.

Is it any wonder, then, that the failure to cut back the tops of newly planted trees results in the death of many of them? This is especially true in Colorado as the dry air and intense sunshine cause the young trees to dry out rapidly.

It is also true that many nurserymen, as well as fruit growers, are careless in handling trees before they are planted. Not infrequently the roots are exposed for hours to the drying action of wind

**How to Properly Train Young Trees and the Results Attained by Persistent Efforts Toward Perfection. By Wendell Paddock**

and sun. One must take the chances of such treatment from the nurserymen but after the trees have been received by the grower there is no excuse for neglect in this respect. The trees should be heeled in deeply at once in damp soil and when planting the work should be so arranged that the roots of each tree shall be exposed to the air for the shortest possible time.

All bruised and torn roots should be carefully removed, leaving smoothly cut ends which will readily heal; if this is not done decay is apt to set in which may seriously injure the tree. Long straggling roots may well be shortened and if a tangled mass of fine roots are present they should be shortened and thinned. Some successful growers also insist that where large spreading roots occur a slanting cut should be made so that the cut surface may rest flat upon the ground.

It would seem to be almost superfluous to insist on the importance of having all nursery stock inspected by the county inspectors, yet there are a few who try each year to evade the law in this respect. There are several insect pests and plant diseases which are very common on young trees, all of which may be easily overlooked by anyone who is not

thoroughly familiar with them. The wooly aphis is such an insect and it is doing a great amount of damage in all sections of the state. This insect lives on the roots of trees and is introduced to our orchards almost wholly by infected nursery stock. When once established it spreads rapidly and is almost impossible to eradicate. Crown gall is a common disease in many nurseries and it attacks all kinds of fruit trees. It is the worst kind of folly to plant a tree which has a trace of this disease, for not only is the tree pretty sure to die before it comes into full bearing but the infection may be spread by the cultivator or in the irrigation water to all parts of the orchard. A statement made in a former bulletin on the subject of inspection will bear repetition here:

"All possible assistance should be given the county inspectors in their inspection of nursery stock. In counties where many trees are being planted, sufficient assistance should be provided, so that there will be no possibility of any shipments being overlooked. And finally some means should be devised whereby the importance of inspection can be impressed on the growers since, in some instances, they antagonize the inspectors and hinder their work. It is no doubt true that the inspection of nursery stock alone, if well done, pays many times over for all the expense incurred, even in those counties which expend the most money in orchard inspection."

But in those counties where several hundred thousand trees are planted each spring the inspectors are so rushed with their work that the most careful men are liable to overlook an occasional infected tree; therefore no grower can afford to be unfamiliar with these common pests. Each tree should be re-inspected as it is planted and to make the work thorough, the roots should be dipped in water so as to remove any dirt which might conceal small galls or a few aphids. In this discussion it is presumed that the planting is done in the spring as this is nearly the universal practice in this state.

It should be also stated here that the requirements of apple trees have been foremost in mind in the following pages. The same principles will apply, however, to all other kinds of fruit with the possible exception of the peach. A short discussion of the special requirements of this fruit will be given in a subsequent issue of this magazine.

The proper formation of the top is by no means the least important reason for cutting back the branches of newly planted trees. In the first place the importance of low-headed trees for this climate cannot be too strongly emphasized. Hundreds of trees are dying in all parts of Colorado because of the exposure of the long trunks to the afternoon sun, either directly or by reflection from hot dry soil in summer or snow

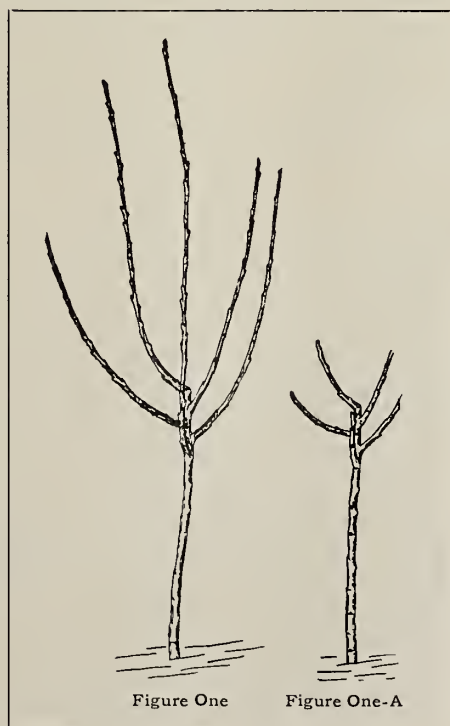


Figure One

Figure One-A



in winter. Young trees are especially liable to injury which results in early death or a weak, sickly growth from which they never recover. There is less injury from sun scald in the humid states, but in these districts many authorities are advocating lower headed trees. In addition to forming low heads there can be no question but that it pays to still further protect the trunks of newly planted trees from injury by sun scald. Various devices are used, such as wrapping the trunks with burlap, paper, straw, wood veneer, or by shading the trunk on the southwest side with a thin piece of board set upright in the ground. Whitewashing the young trunks to serve the same purpose has come to be extensively used in portions of California. Whatever method is adopted, it should be applied soon after the trees are planted and kept in good condition through the second winter or until the shade of the trees becomes ample.

The advantages of low-headed trees may be mentioned as follows: Greater ease in picking, thinning, pruning and spraying and less damage to trees and fruit from winds. Some growers object to low-headed trees on account of the greater difficulty of cultivating around them, but with proper pruning low-headed trees develop ascending branches as shown in plate I. There is not the slightest difficulty in working around the trees in this orchard, whereas the branches on high-headed trees commonly droop after they have borne a full crop of fruit and so interfere with all orchard management.

The following extract is taken from Professor Bailey's Pruning Book:

"The relative merits of high or low heads for fruit trees are always in dispute. This controversy is partly the result of confusion of ideas, and partly of differing mental ideals and of varying climates. Two factors are chiefly concerned in these disputes—the question of ease of cultivation, and the question of injury to the trunk by sun scald. It is the commonest notion that short trunks necessarily make low heads, and yet any one who can see a tree should know better. The number of trunks which a tree has does not determine the direction of the leaf-bearing limbs. This tree (referring to illustration) can be worked around as easily as it could be if it only had one trunk. In fact, branches which start high from a trunk are very apt to become horizontal and to droop. There must be a certain num-

ber of scaffold limbs to form the head. If these limbs are taken out comparatively low, they may be trained in an upright direction and hold their weight and position. If they are started out very high they will not take such an upright direction, because the tree will not grow beyond its normal stature. High trained trees are often practically lowest headed."

#### Form of Tree

The business of orcharding is not old enough to have developed systems of pruning which may be said to be characteristic of the state. The conditions existing in the fruit districts have been so favorable for the production of fine

be ruined, but by having several main branches or trunks one of them might be spared without seriously crippling the tree. But the protection may be carried still further by keeping the main branches of the vase shaped tree free of all small limbs and fruit spurs which are so susceptible to attacks of blight.

#### Shaping the Newly Planted Tree

The term low-headed is a relative one, but a top may be considered low when the first branch is thirty inches from the surface of the ground. Some of our successful growers prefer higher heads than this, while others start them lower. Our own preference is for a trunk about twenty inches in height.



Plate One Showing Low-Headed Trees With Ascending Branches

fruit that the growers have not felt the need of the finest development of the art. We have grown fine fruit whether we would or no. But now that competition is more severe and insects and diseases are multiplying more attention must be given to methods and systems of culture.

In pruning trees one of two ideals must be adopted, which are known as the pyramidal and vase forms. The former preserves the leader, which is made to form a central shaft to the tree. This style has the advantage of more bearing surface, as the leader grows and in time forms a "two-storied" tree. The objections to tall trees are apparent and need not be discussed here. The leader is done away with in the vase form and a few limbs, usually not more than five, are selected to form the top. A more or less open centered tree is thus formed, but by skillful pruning this space is occupied by branches of bearing wood. Very tall trees are thus avoided, but what is more important, such trees are not so apt to be destroyed by blight, as recently pointed out by Mr. Waite. Death to trees result when the blight germs gain entrance to the trunks and larger limbs. Such attacks are usually brought about by the presence of small limbs, water spouts or fruit spurs, which become diseased and which the germs follow till the main trunk or branch is reached. Should the leader of a pyramidal tree be attacked seriously enough to necessitate its removal the tree would

But whatever height is determined upon the tree must be cut back, preferably just after it has been planted. Should the tree be supplied with suitable limbs at the point where the head is desired three to five of them, properly spaced, should be selected to form the frame work of the tree. The rest are removed. The selected branches should then be shortened in to a sound bud within a few inches of the main stem. But ordinarily the lower branches are pruned off in the nursery so that we seldom get a tree from which suitable branches may be selected. In this case the entire top should be removed without regard to branches, making the cut a foot to eighteen inches above the point where the lowest limb is wanted. In doing this it is expected that branches will push out below in sufficient numbers so that suitable selections may be made. For this reason strong yearling trees are always preferable to older ones and in fact apple trees of this age are now commonly used in California. Should suitable branches fail to grow, one of the lower branches which nearly always form, must be developed to form a new head.

The trees should be gone over several times during the first summer to remove surplus shoots and especially those which push out far below the point where the lowest branch is wanted. Occasionally some of the upper branches develop a vigorous growth at the expense of the others. These should be

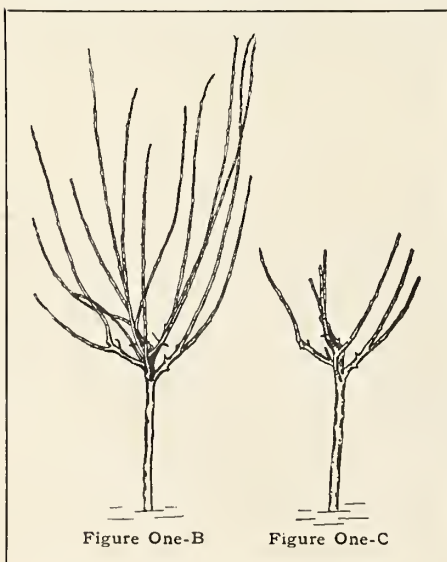


Figure One-B

Figure One-C



headed back so as to give all a chance to develop, otherwise some of the important scaffold limbs may be found to be very weak at the close of the season.

When a branch is headed back great pains should be taken to make a slanting cut just above a sound bud. If made too far above, the stub will die back at least as far as the bud, and often farther. If made too close, the bud may be so injured that a stub is formed which will die back at least to the next sound bud.

As soon as the trees are planted, then the top should be cut back as described above. Ordinarily a profusion of branches will be pushed out which may be allowed to grow as they will during the first season or they may be cut back

has been taken out at twenty inches from the ground, the highest branch should be at least a foot above; two feet would be better. A common mistake is to cut trees back too far thus crowding the branches as shown in plate I. Neither were these branches thinned out nor headed in during the first season but were all allowed to develop into leaders. This latter mistake often results in long willowy branches which droop with a load of fruit and is the main reason for condemning low-headed trees. Many growers carry their pruning up to this point successfully, but fail to head in the first season's growth and so miss one of the critical points in the proper formation of the top.

wood farther away from the trunk and main branches. Some growers object to heading in trees at all, for the reason that all of the buds are likely to develop into branches and so the formation of fruit spurs is retarded and the surplus branches must be cut out. But it is highly desirable that all of the buds should develop and then by heading them back to spurs, as just mentioned, the formation of fruit spurs is largely under control of the pruner.

Any tendency toward one-sidedness may to some extent be corrected and open spaces filled in by selecting branches that are already growing in the general direction of the vacancy. Then by cutting to a bud, which is on the side toward the opening, such faults may gradually be overcome.

### Third Year

The frame work of the tree should now be well formed so that it will require less attention from this time on. Surplus branches and those that rub or are inclined to form crotches should be removed. Very vigorous growths should also be headed in.

Thus far our discussion has been confined to the shaping of open or vase formed trees. If a leader is desired, the treatment is practically the same, except that the upper shoot is allowed to grow with little heading in. Branches are allowed to develop on this leader at proper intervals, using the same care as to location, pruning and development as in the former case.

A discussion of some photographs of actual experience in pruning young trees will help to review and fix the points of the different stages of pruning in mind. These were second grade trees and were evidently three years old when planted. The lower laterals had all been pruned away in the nursery so that the tops were much too high for Colorado. There was also difficulty in getting branches to form at suitable places from which to make the selections for the head. However, the results are much better than as though the tops had been left as received from the nursery as is so often done.



Plate Two Showing Young Apple Trees Well Headed In

to one or two buds. By the time these branches begin to grow the roots are established in the soil and new ones formed so that an adequate supply of plant food is provided. It will be remembered, however, that the plant cannot use this food until it has been made over in the leaves. It is for this reason that a large leaf surface is necessary and it is also desirable in that the shade forms a protection from the sun.

The kind of top which the tree is to assume is developed with the first season's pruning, which should be begun in most sections not earlier than the first of March. This is true for the reason if done earlier a longer time must elapse before the wounds can heal and necessarily the cut surfaces are exposed that much longer to the drying action of the sun, wind and frost. It is commonly understood among orchardmen that trees must not be pruned when the wood is frozen. Pruning when the trees are in this condition often results in bad wounds and the dying back of branches, but this is result is probably due to the agencies just mentioned rather than to the fact that the wood was frozen. In any case the rule is a good one to follow. Then, too, there is always more or less danger from winter killing after early pruning is done so that the trees would need to be gone over a second time.

From three to five limbs are now selected to form the framework of the tree which should be cut back about twelve inches from the trunk. The rest are removed. If the lowest branch

It is a common notion that the branches gradually get higher from the ground as the tree continues to grow. The apparent gain in height is due solely to the increase in the diameter of the limbs which soon begin to crowd if sufficient space has not been left between them. The centers of the limbs will always remain the same distance apart, so in forming the head one should have in mind what the appearance of the limbs will be when they have attained a diameter of six or more inches.

### Second Year

It may be regarded as a rule, that when a limb is cut back, unless the cut is made just above a strong lateral, two or more branches will develop near the cut end and some of the buds lower down will develop into shoots. The usual practice is to allow two of these to grow on each of the previous year's limbs to form an additional framework for the tree. The two selected should be some distance apart, one at the end and one farther back, and so placed that the development of crotches will be impossible. They are now cut back from a half to two-thirds of their growth and the laterals are shortened to one or two buds so that they may later develop fruit spurs and also shade the branches with their cluster of leaves. If too many have formed, some of them should of course be removed. On the other hand if we are to develop Mr. Waite's idea of making the tree more resistant to blight, these laterals should all be removed and so carry the fruit bearing



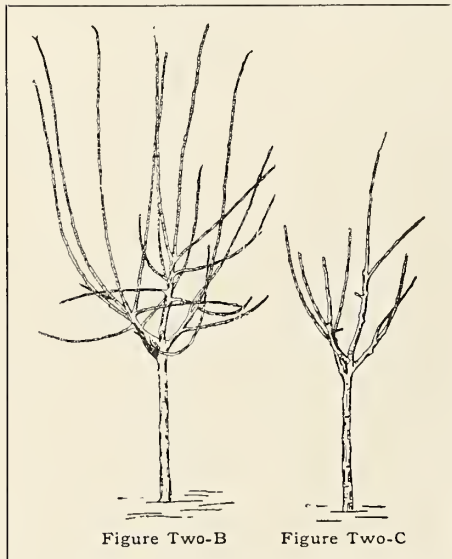
Figure Two

Figure Two-A



The trees in figures 1 and 2 were all headed back to about 24 inches in April, 1904. This left them mere stubs. Had there been any laterals below this point they would have been pruned back to single buds so that clusters of leaves might have formed and thus provided some shade for the trunks. These pictures show how the trees looked in April, 1905, at the time of the first pruning. No. 1 had formed five vigorous branches and No. 2 produced four.

The five branches on No. 1 were saved to form a framework for the tree and were cut back to about one foot in length. These are well distributed about the trunk, but have the fault that they are too close together. The lowest



limb might well be double the distance from the top that it now is. No. 1a shows No. 1 after it was pruned, with the idea of making an open centered tree.

No. 2 is also open to the objection that the limbs are too close. All of these were saved to form the frame work of a tree with a leader as is shown in No. 2a. The only difference between this and No. 1a being that the topmost branch was left longer than the others. The pruner of this tree is open to severe criticism in that he has allowed three vigorous limbs to grow from near the surface of the ground. These limbs could serve no useful purpose and so only rob the other limbs of plant food. Such growths are best prevented by pinching off the buds early in the season.

No. 3 failed to throw out enough branches to form a suitable top. The two which produced are nearly opposite, so that a bad crotch would soon result. Both branches were cut back to the second bud, as shown in 3a, in the hopes of inducing dormant buds to push out lower down.

No. 4 shows one of this lot of trees that was left unpruned. Notice the weak spindling growth and short laterals as compared with the others. There is small chance of making a decent tree out of such a specimen even though it should live. Such illustrations as this, should prove to any one that all trees should be headed back when planted, if for no other purpose than to induce a vigorous growth.

At the close of the season of 1905 the pruned trees had made a growth respectively as shown in 1b, 2b and 3b.

Pruning should, of course, be done in late winter or early spring, but these trees were pruned for the purpose of il-

lustration and the results are shown in 1c, 2c and 3c. Tree No. 1 has now taken the form shown in 1c. One of the scaffold limbs seemed superfluous so it was removed and the new growth, shown in Fig. 1b, was cut back about one-half. The few side shoots were cut back to a single bud with the idea of developing fruit spurs. During the season of 1906 numerous branches should develop on all of these scaffold limbs. As a rule two of the best placed of these secondary limbs will be selected on each of the main scaffold limbs to form additional framework. The rest may be removed or cut back to develop fruit spurs as may be.

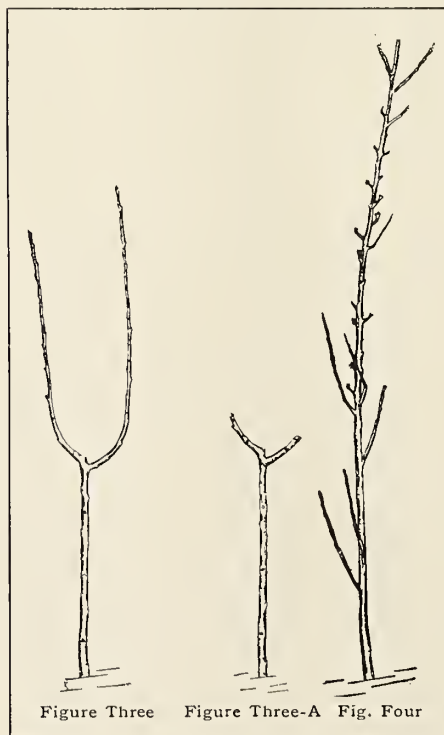
The form of the tree then, should be developed at the beginning of the season of 1907 and subsequent pruning should be directed toward retaining this shape, cutting back excessive growths and thinning and renewing the bearing wood.

The pruning of tree No. 2 is much the same, except that a leader is being developed. Fig. 2c shows that although the top was cut back the same as tree No. 1, the topmost branch is developing into a vigorous central shaft. The first set of scaffold limbs have been formed and a second set is to be developed at a suitable distance above. The new growth is to be cut back the same as has been described.

The tree shown in the series 3-3c is, so far pretty much of a failure. The severe heading given it in the spring of 1905 failed to make branches develop lower down. It would have been a better plan to have inserted two or three buds at suitable points around the main stem in June, 1905. This can probably be done next June, but the chance for success is not so great. Limbs can be developed by this means just where they are wanted, but the average person will succeed better with trees which do not require such manipulation.

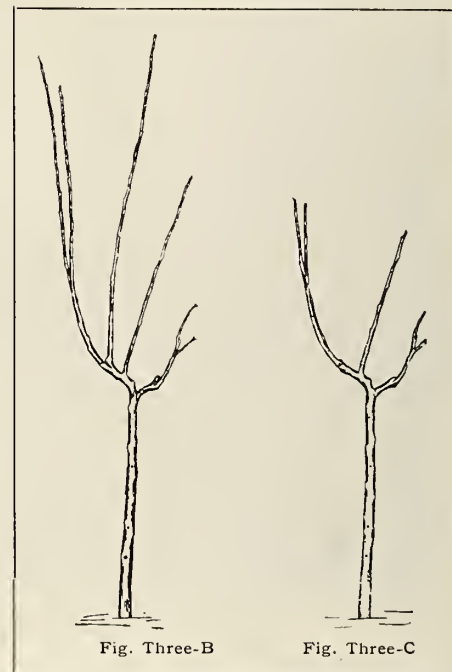
#### Pruning Bearing Trees

The form of the young tree should be well established after the third season. From this time on the question of



pruning is simply to retain so far as possible the form we have started, to prevent the formation of crotches and cross branches, to thin out an excess of branches so that sunlight may be admitted and the amount of bearing wood reduced and renewed.

One of the peculiar effects of high altitude, with the accompanying sunshine on plants, is that it induces fruitfulness and early bearing. Many varieties of apples produce paying crops when the trees are six years old and the tendency of young trees to overbear annually is pronounced. We, therefore, are rarely obliged to prune to induce fruitfulness. Should such an occasion arise, the following should be



borne in mind: Prune in summer to induce fruitfulness and in winter to promote wood growth. This is true for the reason that summer pruning checks the growth of the tree by removing a portion of the leaf surface. An injury of any kind will have the same effect, likewise a weak growing or sickly tree should be severely headed in while still dormant in order to induce a vigorous top growth.

Thin out the top then every year. No general rule can be given as each tree presents a different problem. A thick growth of branches results in weak bearing shoots and spurs. And finally when cutting back limbs on bearing trees the cut should be made just above a strong lateral wherever possible. The tendency of the sap will be to flow into the lateral and thus prevent the formation of numerous branches which nearly always results when a so-called stub cut is made.

A number of our best varieties of apples are apt to develop long slender branches which may bend and rest on the ground and indeed it is not uncommon for such branches to break under a load of fruit. Some of these kinds like the Winesap are very apt to overbear periodically as they get older, often to such an extent that the branches are broken down with a load of undersized fruit. It may take such trees two seasons to recover from the effect of overbearing, but the third year the process may be repeated. A severe heading in

Continued on page 19





Peach Orchard of Keeley & Dubois, Underwood, Wash., Nine Years Old

## SOME REASONS WHY FRUIT DOES NOT SET

**I**N order that fruit shall set it is necessary that the flowers be fertilized. Fertilization is the union of the pollen with the ovules, which are the small bodies that develop into seeds. Fertilization is essentially the same in plants and animals. A perfect flower consists of stamens, which produce the pollen, and pistils, which contain the ovules. In some flowers, however, the stamens and pistils may be produced in separate flowers on the same plant, as the corn; or even on different plants, as the willows and cottonwood.

When the pistils are fertilized by pollen from the same flowers, the flowers are said to be self-fertilized. This can happen only in perfect flowers. Self-fertilization usually takes place in wheat and other cereals and in some other plants. However, most plants, especially those having showy flowers, are not fertilized by the pollen from the same flower, but from a different flower; that is, they are cross-fertilized. The reason for this has been proven experimentally to be that cross-fertilization usually produces hardier progeny than self-fertilization. (It should be borne in mind that these remarks do not necessarily apply to hybridization, in which the pistil is fertilized by pollen from a different species.) In cross-fertilization the pollen may be transferred from one flower to another by wind or

by insects. In our common edible fruits the pollen is carried by insects. As a rule such plants have flowers which secrete nectar, and the insects visit the flowers for the nectar, accidentally carrying the pollen upon their bodies. Bees, especially honey-bees, are the most important insects in this respect.

There are four important reasons why fruit may fail to set:

1. The pollen may be insufficient in quantity. This applies particularly to the strawberry. Many of our cultivated varieties, the so-called pistillate sorts, produce only a small amount of pollen, not enough for complete fertilization (such as Bubach, Warfield, Crescent). A failure from this cause may be easily prevented by planting pollen-producing varieties (the so-called staminate sorts) alongside the others (such as Captain Jack, Parker, Earle, Gandy).

2. Insects may be prevented from visiting the flowers during the receptive period. If bees are kept from fruit blossoms by netting or other artificial means, the amount of fruit set is little or none. It not infrequently happens that inclement weather prevents or hinders the flying of bees during the period when the flowers are receptive. A fruit tree, half of which was subjected to a continuous spray of water during the flow-

ering period, produced no fruit upon the sprayed portion, but an abundance upon the other. A failure due to the above mentioned cause can not well be prevented, but may be modified by having bees near at hand to utilize the short favorable periods which do occur.

3. In some varieties of fruits the flowers are self-sterile and refuse to take pollen even from another flower on the same plant. Fertilization can then take place only when the pollen comes from a separate plant, that is from a plant arising from a separate seed. All our varieties of orchard and small fruits are reproduced by cuttings, grafts, buds, layers or other similar methods and not from seed, from this cause. To prevent such failures mix the varieties. The quickest way to remedy cases which have reached maturity is to top graft another variety upon them in sufficient quantity. (The Seckel and Kieffer pears and the Concord, Niagara, Agawam and Green Mountain grapes are self-fertile.)

4. An insufficient supply of bees will hinder the setting of fruit. While other insects may take part in the carrying of pollen, the fruit-raiser must rely chiefly upon honey-bees. Experience shows that the hungry bees may fly two or three miles, hives should be within half a mile of the orchard or small fruit patch.—Kansas Bulletin.



# THE CAMPBELL SYSTEM OF DRY FARMING

SINCE Cain first tilled the soil, many a new thing has been seen in agriculture, but in the actual handling of the soil, perhaps not many. A picture of the year's work by the man who without irrigation successfully farms the semi-arid prairies of the "Great American Desert," however, shows some striking novelties, heralding perhaps an agricultural revolution.

This newest farmer seems to have a mania for stirring the soil—not to kill the weeds, not to cover seeds, not to make it "look nice"—but apparently for

madman will not harrow them or that corn, the green rows of which show so prettily through the smooth crust left by the rain? Over it all go the harrows, and it looks ruined. But the farmer smiles, and in August he cuts his grain and follows his reaper with the disc harrow; plows deep in the fall and follows the subsurface packer, and, until frost locks up the moisture, after every shower he sweeps the brown autumnal fields with the pulverizing steel teeth. And there's deep method in his "madness." He does none of these aimlessly. He is practising the "Dry Farming" or "Campbell" method of rain economy, the latest thing in agronomy. The originator of the "Campbell Method" of "Dry Farming" is teaching the so-called "arid" West that it is not arid if it but uses properly the ordinary rainfall that its climate yields.

The Campbell system conserves and economizes the rainfall of the dry regions by checking the evaporation of moisture from the soil; and the importance of it is not yet realized, for, though it seems adapted to the cultivation of the arid lands of Eastern Europe, South Africa, and Australia, and of the pampas and llanos of South America, it has yet been used only in our own "rainless" regions. But in America the dry lands stretch from Texas to Assiniboia, and from the Rocky Mountains eastward some hundreds of miles. Within the borders of this region lie parts of Texas, New Mexico, Indian Territory and Oklahoma, Kansas, Colorado, Nebraska, Wyoming, Montana, the Dakotas, and (in Canada) Alberta and Assiniboia; and in many scantily watered mountain regions where cattle grazing is now the sole industry, the Campbell method would grow bountiful crops. It promises to do this, moreover, without Government aid, and with the use of ordinary tools only and with no great outlay of capital.

Our material development and the spread of population has forced upon us the need of utilizing every acre of our territory. As a consequence even the "Great American Desert" has been occupied. A few successive seasons of unusual rainfall coincided with a boom in farm lands, and from 1878 to 1888, immigration has poured into the Dakotas, Nebraska and Kansas at a rate which forced new municipalities into being like mushrooms.

The newly broken sod was wonderfully prolific and it was fondly thought that these conditions were permanent. It was easy to find old inhabitants to maintain that the climate has grown vastly more humid within their memories. The turning up of the soil and the rearing of the crops would, it was said, hold moisture, temper the winds, decrease evaporation, and "make more rain." Settlers came by thousands, as did the dollars of the frugal East and of Europe, and "everybody made money."

It took some years of crop and mortgage-company failure to convince the Eastern mortgagee that the loan was really the purchase of a quarter-section of very fine land—upon which ordinary farming had failed—and to burn into the mind of the settler that such culture as he knew how to bestow would produce crops only from two to five years in ten. By that time Buffalo grass was contending with alien weeds for the re-possession of thousands of abandoned farms; the prairies were dotted with empty and ruined houses; railroad com-

panies found two or three trains a week ample to handle traffic. The hardest of times prevailed, and worst of all, the hope which had fired these new communities was succeeded by despair. The most intelligent men of the semi-arid belt were brought to believe that, instead of dense communities of agriculturists, these regions were forever doomed to contain only the sparse population of a purely stock raising country, with meagre lines of irrigated land along the streams. The values lost in this change were enormous, the actual monetary loss almost incalculable.



A Peach Tree Five Months From Setting on a "Dry Farming" Model Farm in Colorado

the mere sake of the work itself. The denizen of the "desert" anxiously watches his fields all winter, and as soon as the frost has so far left the soil as to permit it, he is out with disc harrows loosening up the dirt of all his land, plowed or unplowed. If a shower comes he harrows again, this time with broad, spike-tooth drags. By the time he is ready to sow his wheat the field may look as if it had been planted and turned over to Mother Nature; but no, he sows and then harrows again. He will have but little spring plowing to do, but such as he has he plows deep, setting the beautiful polished share eight or ten inches deep into the black soil, and, while it is still damp, he packs the fresh plowed ground with a "subsurface packer," going forth with four horses hitched to a weighted machine (consisting of two or three dozen big, wedge-faced iron wheels) which crushes down into the soft ground, pressing it firm, and, as it rolls onward, lifting up a few inches of the surface earth, and letting it fall back in loose tilth. Pack the bottom and have the top mellow? A paradox, is it not; yet the subsurface packer does it.

A rain comes and drowns the fields. The Eastern farmer would accept it, and let it go at that. Not so the newest farmer. Like a hawk he watches for the drying of the soil, and at the first possible moment, all hands rush to the fields with their four-horse teams and their forty-foot harrows and sweep over the farm. The oats and barley and wheat are several inches high; surely the



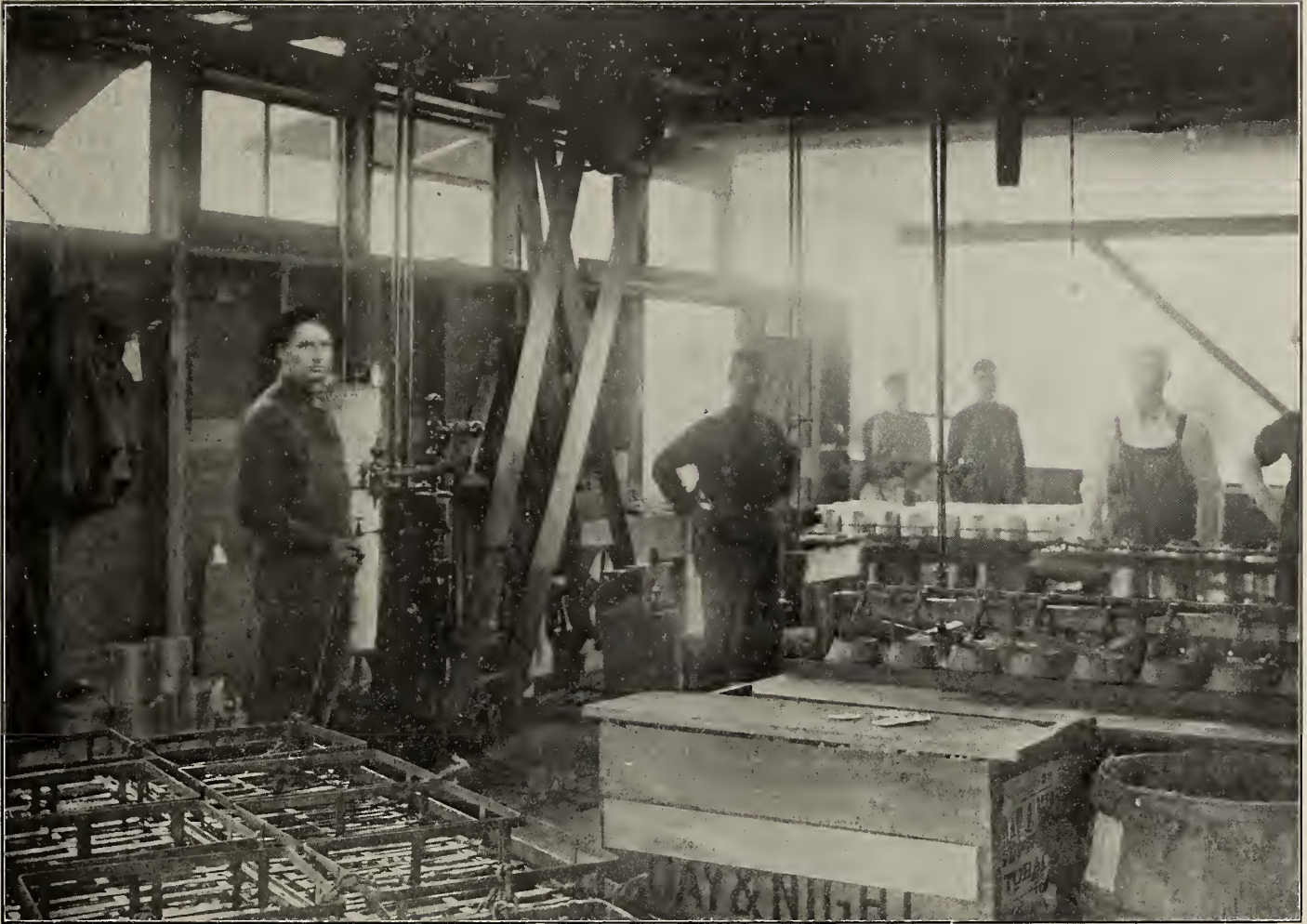
Same Tree Eleven Months Later, Growing on a Semi-Desert Without Irrigation

Mr. Campbell's knowledge of the conditions to be overcome came through a ripe experience in the droughts and hot winds of the upper James River Valley in South Dakota, where he began his experiments twenty-three years ago. Here are the elements of the problem to whose solution he addressed himself:

A great plain of almost uniformly level surface; a wonderfully fertile soil; a sub-humid atmosphere giving an average normal rainfall of only fifteen or twenty inches; a capricious climate, subject to sharp deviations from the normal; hot and thirsty southerly winds in summer; warm and dry "Chinooks" in winter.

Out of these conditions, and in spite of them, to develop some plan of successful farming without irrigation, might well have daunted any one but an enthusiast. The books had laid down the law that severe droughts are to be expected wherever the mean annual rainfall is less than fifty inches, with a mean annual deviation from the normal of more than twelve per cent, and that for successful farming without irrigation a rainfall exceeding twenty inches is necessary. These statements, reinforced by bitter experience, seemed to need no further proof. The one comforting fact yielded by climatology was, that the months of greatest precipitation in all this central plain are May, June and July, the season of growing crops. Clinging to this strand of comfort, Mr. Campbell went to work anew.





Weber-Bussell Cannery, Puyallup. Paid growers \$7,000 in one week for berries not in condition to ship

The first result of his "Yankee" figuring was this: That an inch of rainfall is about 120 tons of water per acre; that twelve inches of rainfall, if it could be kept in the ground, is amply sufficient to mature a crop of five tons of dry produce to the acre, and hence, that in the driest year of his dearth, there was more rainfall than the crops needed. The trouble was evaporation, not deficient rainfall. Upon this truth all his subsequent work was founded.

To follow the devious course of his experiments since 1883, with their varying success and failure—how he grasped every suggestion of leaf and blade and studied the effects of wagon tracks and hoof prints in wheat fields, and how he was ridiculed by the skeptics whom he sought to benefit—would be to tell a long story. Gradually, however, he has perfected his system and won recognition, and his labor has convinced those who have studied it that the redemption of the arid West, if it is to come at all, must come through the adoption of the system of tillage developed by his patience.

The system consists mainly in deep plowing, subsurface packing and constant shallow cultivation of the surface. All these are means toward the sole end of retaining moisture within reach of the plant roots, and reducing evaporation to a minimum. The results obtained seem to warrant the prophecy of an agricultural revolution in the sub-humid belt.

Deep plowing, Mr. Campbell says, is necessary to the formation of an ample reservoir for the retention of water. The prairie soils have lain unstirred for cen-

turies, and the passage of water through them has resulted in a sort of columnar formation. Through the interstices between these "columns" the water runs downward by gravity, and the little columns act as wicks, drawing it back to the surface by capillarity. As long as the tops of these wicks are exposed to the action of the winds, the rapid evaporation that occurs from the surface keeps in motion the endless upward current of moisture to be borne away and wasted by the thirsty breeze. Deep plowing, burying the tops of these columns under from eight to twelve inches of looser soil, effectively checks the movement. But deep plowing alone is not sufficient. The broken ground must receive such treatment at once after plowing, while it is still moist, as will prevent its drying by evaporation, while still allowing the falling of rain to soak into it easily, and also, keeping the hoisting chain of capillarity going beneath the surface to lift moisture to—but not past—the root bed from deep in the earth. And this treatment is the new idea.

The subsurface, from the bottom of the plowed ground to within three or four inches of the surface, must be firmly packed, while the surface soil must remain loose and mellow, and must be immediately pulverized by the harrow. Now "packing" suggests at once the old-fashioned roller. But this time-honored implement will not do. It packs the surface, but can hardly affect the soil five or six inches down. It rolls along upon a crust of its own forming. Even when followed by the harrow, it fails to

meet the requirements of the new method. But the subsurface may be packed with implements found on every farm, and Mr. Campbell has devised besides a special tool for this work.

The reason that packing is indispensable seems plain. The plow turns clods, stubble, weeds and rubbish, under the "slice," forming many cavities. Across these cavities moisture cannot pass by capillarity, but the air chambers increase evaporation. The vegetable matter itself, dry and undecayed, aids evaporation instead of retaining moisture. The root bed cannot hold moisture unless it is firm; and unless moisture be retained the crop fails.

After the deep plowing and the subsurface packing, must follow constant shallow surface cultivation. The object of this is two-fold: to check evaporation, and to avoid disturbance of the plants' root-bed in which is carried on the work of gathering support for the growth above. No long-pointed shovels are permitted. So deep, and no deeper, must the cultivator run throughout the season. The ground, under this plan, after one or two cultivations resembles a level floor of firm earth with two or three inches of dust spread over it.

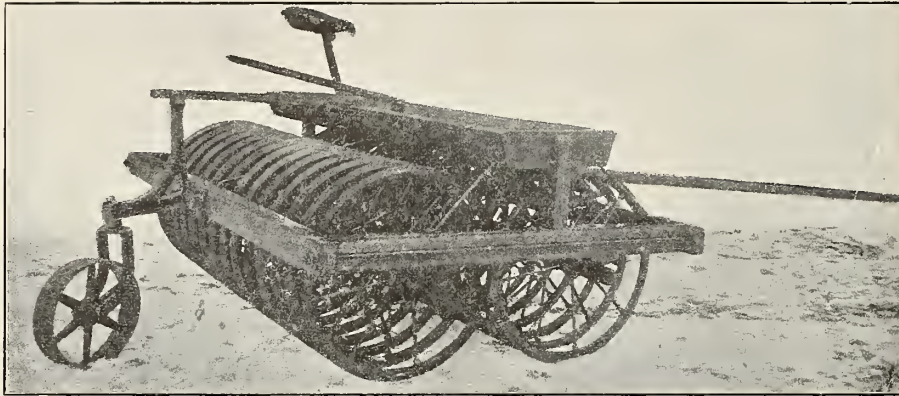
The checking of evaporation is the one end towards which all these steps have tended. For drought is simply evaporation out-stripping rainfall. Only a few inches of rain are needed to mature crops if it can be kept where it is wanted—in the ground. By the Campbell method evaporation may be so reduced that, even with much less than nineteen inches of annual rainfall, precipitation will gain



upon it, and the body of moist earth become greater year by year. And this is done by no magic, but by the simple expedient of keeping the field protected during summer by a three-inch blanket of dust.

This dust blanket is produced by stirring the surface once in every five to

The significant thing shown in this table is the uniform moisture of the Campbell fields, at the level most favorable to plant growth, as well as its constant excess over the others. A few days prior to this, a 24-inch test showed 17¼ per cent moisture in Campbell's field and only 7½ per cent in others. This was



One of the Varieties of the Sub-Soil Packer. This Tool is the Basis of the Success of the Campbell System

seven days through the growing season, to a depth of three or four inches. Success is a question of industry only. When the hot wind blows, cultivate; when the temperature rises, cultivate; and especially after a shower, when the surface has been moistened, settled and crusted over by the baking sun, restore the dust blanket at once by cultivation. For this crust forms a conductor between the moist earth and the dry air above, and in every hour of its existence it empties tons of moisture into the prairie breeze.

All crops grown in hills or rows, such as corn, potatoes, beets and vegetables, must be cultivated from ten to fifteen times during the growing season. Orchards must be given at least as much attention.

The Campbell method has fought its way to acceptance through its results only. Its first victory was won in 1893 in Brown County, South Dakota, when Mr. Campbell grew 124 bushels of potatoes per acre in competition with his "unconverted" father, who undertook by old New England methods to surpass the new way, and met failure from severe drought. In the autumn Mr. Campbell's field was moist to a depth of six feet, though all others were dry as dust to an indefinite depth. In October, 1894, the same fields showed ten feet of moisture—a clear evidence of gain on the drought. Mr. Campbell was testing his system patiently, and by true scientific methods, and this year sent many test tubes of earth to the Department of Agriculture at Washington for moisture tests. The following table shows the results of these tests from two fields: No. 1, under the Campbell method; No. 2, under ordinary tillage. Similar results are found in all these tests. The table covers the first ten tests of July, at the Hastings, Nebraska, station:

Date	Inches Rainfall	Percentage of Moisture	
		No. 1	No. 2
July 1.....	None.....	18.49	9.71
July 3.....	None.....	18.23	9.68
July 4.....	None.....	18.30	10.25
July 5.....	None.....	19.89	9.16
July 6.....	None.....	19.19	10.43
July 8.....	None.....	17.04	10.00
July 9.....	1-16 inch.....	18.85	9.85
July 10.....	None.....	18.37	8.62
July 11.....	None.....	17.36	8.93
July 12.....	None.....	16.29	8.20

followed by a downpour of 5½ inches of rain, immediately after which tests showed 25 per cent of moisture in other fields and only 19 per cent in Campbell's; for water was absorbed more freely in the Campbell field, and went down below the test-tube distance to come up slowly as needed. Twenty-five per cent of water in soil makes mud. Eight per cent leaves it as dry as dust. The writer has found the soil in Campbell's fields moist enough to be squeezed into a ball, while identical soil fifty feet away, cultivated by ordinary methods, would blow away in dust when released.

There is evidence that the farming population is becoming awakened to the value of dry farming. The Campbell method is spoken of as the salvation of the dry belt. The work is an enormous one, that of changing the traditional methods of plowing and harrowing and tilling of a whole farming population. The wonder is, not that his progress has been slow, but that in the ten years of his active apostolate (for such his life has been) this useful and patient man has succeeded in doing so much.

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# THE LAND OF BETTER FRUIT

BY HON. E. L. SMITH

**A**N eminent authority has written, "The Sierra Nevada may without hesitation be called the most important and interesting member of the Cordilleran System, not only as a long mountain chain, on the whole the most conspicuous in the United States, but also . . . for its climate, its forests, its scenery."

The Cascade is a continuation of the Sierra Nevada Range, possessing all its characteristics, and to a greater degree, in respect to its splendid forests and the number and height of its volcanic summits. Three great rivers have pierced this mountain barrier, laden with the drainage of that vast country between the summits of the Rocky and Cascade Ranges. Of these the Columbia is easily the first, carrying at flood time to the ocean the greatest volume of water of any river on the North American Continent. However, for the purpose of this paper, let us consider only that portion of the Cascade Range extending north some seven degrees more or less from the forty-fourth degree of north latitude.

It is readily apparent that this high chain of mountains must exert a radical climatic influence in respect to the country traversed by it. Great cloud-banks, freighted with moisture from the ocean and driven eastward by the west winds, dash against the higher slopes and summits of the Cascades only to find that moisture condensed, precipitated and reseroured on many a snow-covered peak or in the dark forests just below. The early summer sun unlocks the gates of these reservoirs and the descending waters freshen the land and quicken the growth of twig and tree and the green herbage of all the vales below.

The noble coniferous forests on the western slopes of this range are exceeded in value by none on this globe. How dense they stand, these noble shafts of fir and spruce and cedar, and how high they lift their beautiful crowns into the heavens, seeking a freer air, a more abundant sunshine! But mark the contrast in the flora as you descend the eastern slope of this great range. The fir and spruce and dense undergrowth have disappeared and you have come to park-land, the home of the ponderous pine. And here and there these mon-

archs stand, garbed in reddish brown and grouped or wide-spaced by nature's inimitable hand. A little lower yet the pines have disappeared, and when you reach the plains below you may find only the flora of the desert and everywhere you gaze, aridity is stamped on the face of Mother Earth. I had nearly forgotten, for I am fond of the forests and the mountains, that I am writing a paper for a horticultural association instead of an alpine club. I will not wander so far away again.

And now, without comparison or reference to other splendid fruit districts of the Pacific Northwest, I am here to affirm that the fertile valleys of the rivers and stream that constitute the drainage of the eastern slopes of the Cascades from the Columbia to the Fraser can produce fruits in respect to size, color and general excellence unsurpassed by any other fruit district on earth, so far as I am informed. It is interesting to note this fact is universally true of all these river valleys that the latitude where grown is seemingly unimportant. Let us very briefly glance at these numerous streams, the principal ones at least, from the Columbia to the Fraser and ascertain if proof can be added to assertion.

The most southerly stream having its source east of the summit of the Cascades is Hood River and its counterpart the White Salmon, coming from the opposite side, its source the glaciers of Mt. Adams; and the most easterly of the rivers of the Eastern Cascades is the Deschutes. This section is so well known for its magnificent fruits that we need not refer to it at length. Hood River Valley alone promises in the near future with prices less than at present to send out a million dollars worth of apples in a favorable year. The Mosier district, a few miles above Hood River, raises equally fine fruits. The Dalles and the Deschutes sections, a little warmer and dryer, are the home of the peach, the sweet cherry and the native and the European grape. I pass by minor localities and at once come to the Yakima River and its superb valley extending from its junction with the Columbia to the mountains. The fame of the fertility of this valley and the excellence of its fruits of many varieties is abroad in the land. Its horticultural possibilities are beyond even approximation. It is but a step to the Wenatchee Valley, that splendid horticultural garden at the eastern base of the Cascade Range, with its \$2000 per acre orchards and cheap at that. Still north and here we are in the picturesque Chelan section and nowise behind Wenatchee in the perfection of its fruits, if its splendid exhibit at the Lewis and Clark Fair is a criterion. We have next the Methow Valley, full of promise to the orchardists. The next river to the north coming down from the Cascades is the Okanogan, comprising an immense area, especially when taken in connection with the Similkimeen, the Thompson and the Middle Fraser, valleys of magnificent fruit land producing with great uniformity as to excellence the apple, the cherry and the grape.

However, I am getting far from home and this northern land is strange to me, but I have seen the fruit and listened to the tales of our British Columbian friends where the altitude is too high for "hot air," that might be expected farther south, and am convinced that Pomona

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has few localities that she prizes more than these warm valleys of British Columbia that I have named.

Is it not therefore true but strange that all these river valleys that I have named, extending north or south some five hundred miles or more produce the fruits of the temperate zone of greatest excellence, and stranger yet of great uniformity in respect to intense color, large size and high quality? What physical causes are operating to produce these marvelous results, for I cannot call to mind any other section of country, so nearly continuous extending so great a latitudinal length where the same or like conditions obtain? I will venture to name some of them.

First. The Cascade Range is a perfect barrier from the moist atmosphere that comes up from the ocean, an atmosphere that promotes fungous growth, apple canker, apple scab, etc., which it cannot exert in the dry air of the eastern side.

Second. Low altitudes, which mean high temperature during the growing season, the greater portion of these fruit sections being under 1200 feet elevation.

Third. Abundance of plant food in the soil, the accretion of the ages, undiminished by winter floods and rains.

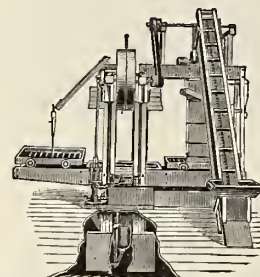
Fourth. Abundance of sunlight, which taken in connection with the potash and iron in the soil gives highest color to the fruit.

Fifth. Cool nights, which offset to a large extent the high temperature of midsummer, the latter not being conducive to the growth of the perfect apple.

Sixth. Abundance of water whose solvent touch unlocks those valuable mineral salts that enter into the composition of both tree and fruit and give luxuriant growth.

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But this paper is quite too long, and I must not linger to call your attention farther to these fertile valleys of the Northwest, beautiful in their setting, protected by that great mountain barrier magnificent in all its outlines, valleys contributing to the happiness and health of many people and to the wealth of the state. And are they not worthy of being characterized as "The Land of Better Fruit"?

Американскіе  
Спеціально приготовлені для  
Портового Дома  
Бр. Ягджолю  
Владивостокъ  
Свѣтъ улицы г. Пьянкова  
Прямой Торговлѣ

The above cut is printed on wrappers used to pack fruit that is bought to go to Siberia. The translation of the same is as follows:

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Oregon  
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Vladivostok, Siberia  
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## HOW TO CLEAN FRUIT TREES

FRUIT INSPECTOR ARMSTRONG GIVES SUGGESTIONS FOR SPRAYING

**M**R. E. C. ARMSTRONG, Fruit Inspector of Marion County, has issued a circular which gives in condensed form much practical information desired by the growers. This circular will do much toward inducing the growers to spray, for it tells them how to prepare for the work. The text of the circular follows:

"Formula for the winter spray: 15 pounds of unslacked lime, 15 pounds of pulverized sulphur, 50 gallons of water.

"Get some kind of a vessel in which you can cook 20 gallons. A good cheap vat is made by using wooden sides and ends and sheet-iron bottom. Or wooden sides with sheet-iron bottom and ends. Have the wooden part one and one-half or two inches thick, and have the sheet-iron bottom extending two inches past the sides.

"Put in the vat 15 or 20 gallons of water. Heat it to near the boiling point. Put in the 15 pounds of lime and stir it a little with a paddle or hoe to keep it from burning. Add the 15 pounds of sulphur, and boil hard for at least an hour. A longer time would be better. When it is done the dry sulphur will all be dissolved, and the material will have almost a blood-red appearance. Strain this thoroughly when it is put into the barrel so no sediment will clog the nozzle while spraying. Add enough water to make 50 gallons. Use while warm.

"You cannot cook the material too much. One hour hard boiling is worth more than two hours simmering. It would be well to keep the vat covered while boiling.

"The liquid will not spoil if it cannot be used for a few days after being cooked. But it is better to use it while fresh.

"Use a nozzle that can easily be cleaned.

"Do not spray while it is raining or while the trees are wet with fog.

"Use only the spray formulas recommended by the State Board of Horticulture. They have been tested by the different state experimental stations and by the Government authorities, and only the best are recommended. So do not try experiments; it costs too much and you will accomplish nothing.

"The lime and sulphur spray is equally as good as a fungicide as an insecticide.

"Some of the worst things we have to contend with are fungus diseases. The winter spray will do more to eradicate them than anything else you can do.

"The old orchard should be thoroughly pruned and all worthless trees taken out and burned before the spraying is done.

"In pruning the old neglected trees it is not a question of scientific pruning so much as getting the trees in shape so they can be sprayed.

"The spray would be more effective on the old trees if the rough bark and the thickest of the moss was scraped off.

"The winter spray will affect the codlin moth but little, if any.

"Young orchards that seem to be perfectly clean should be sprayed. It will act as a tonic to the tree. A preventive is better than a cure.

"All the old orchards are infected with insects and fungus diseases.

"Do not wait for the inspector to come and condemn them. Go at them now.

"In all your work it pays to be thorough.

"Be careful about using prepared sprays. Some of them are worthless, and all of them are expensive.

"A high pressure is necessary for good spraying. You want a spray, not a sprinkler.

"The cost cannot well be given, as that varies so much with different conditions.

"Do not expect much from one spraying. It took some of the trees a long time to get in the condition they are now in.

"Do not take the advice of every one who may happen to pass. Follow the instructions of the State Horticultural Board.

"These instructions and suggestions are only for cleaning the trees while they are dormant. Instructions for the summer spray will be given later."

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NORTH YAKIMA, WASH.

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is the only magazine in America which is devoted exclusively to the interest of those who grow fruit. It is handsomely illustrated, and contains from 36 to 76 pages each month. It tells all about fruit of all kinds—and nothing but fruit—how to market, how to pack, cultivate, spray, prune, how to MAKE MORE MONEY from your crops. Sample copy sent free. Regular price is a dollar a year, and each subscriber is entitled to a choice of any one of our series of ten Brother Jonathan Fruit Books—the best in existence.

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**NEW WRINKLE IN THE FRUIT LINE**

FIRST CARLOAD OF SEEDED PRUNES SHIPPED TO EASTERN STATES

**T**HE first carload of seeded prunes ever put up for the trade was shipped East from Selma on the 9th instant, consigned to Boston buyers. This marks an innovation and it is confidently expected will revolutionize the prune industry in California by making a profitable market for the product of the orchards.

T. H. Elliott, manager of the Selma Fruit Company, is the inventor of a process to seed prunes at a low cost, and this machinery has been installed in the company's big plant in Selma, where it is now in successful operation, seeding the favorite boarding-house delicacy and thereby popularizing it with the trade. Selma seeded prunes are therefore the latest prepared food on the market, and much industrial benefit is expected to accrue to the town because of this.

Seeded prunes "took" with the Eastern wholesalers immediately upon receipt of sample cartons sent early in the season and orders have been coming in from many cities. Because of the quick response Manager Elliott is confident that another great industry, similar to the seeded raisin industry, will be the result. He is preparing to make a big run next season and already several offers have been made for the use of his invention in seeding plants to be established in other places. San Jose prune men have taken special interest in the new invention and it is likely a seeded prune plant will be established there before next fall.

Seeding prunes, if one may judge from the sample, will add to their value as a food product as well as be a means of saving in keeping the seeds for use in the by-product factories. Instead of the seeds being a waste of one-fifth and an expense in shipping, the consumer will not be bothered with it at all, for he will be offered something more attractive. Seeded prunes, like raisins, are processed, and this makes them more palatable even in an uncooked condition. Eastern consumers will find that a hearty meal can be made by serving the fruit right from the attractive carton. When cooked the prunes assume their rotund, full and juicy appearance as if they had not been deprived of their seeds. There is then no need of performing table sleight of hand.

The shipment of seeded prunes to Boston consisted of ten, twenty and fifty-pound boxes, also cases of prunes packed in attractive one-pound cartons. The cartons are packed thirty-six in a case, and it is expected that this form will prove the greatest seller on the market, as it is more convenient for display purposes and also for the consumer.

The problem of cheaply seeding prunes has been a source of experimental work for several years and attempts to invent a machine to do this work successfully and at a low cost have heretofore been a failure. Elliott worked on his invention for three years before striking the right idea, and now he is conducting his business behind barred doors until he can secure a patent upon the method.

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**NECESSITY AND BENEFITS OF ASSOCIATIONS  
FOR FRUIT GROWERS, By E. H. SHEPARD**

**B**EFORE beginning an address on so vital and important a subject, it seems proper to make a few introductory remarks, for the reason that I purpose making strong assertions founded on observation and actual experience. As many of you are strangers, it seems fitting that you should be advised in advance regarding my opportunities for observation and actual experience, and in giving you this information I must beg your pardon for the following short review of my opportunities.

In the first place, I grew up in the orchard, my father being a large fruit grower in California, and after graduating from college I engaged in wholesale business for twenty years. During the past four years I have been engaged in growing fruit and setting a young orchard at Hood River, and during this time I have been manager of both the Hood River associations. This position kept me in daily touch by wire and letter with all the principal fruit markets in America and England, and in addition brought me in personal contact with two hundred growers.

The production and marketing of fruit are as essentially different as manufacturing and selling, and in order to do either well requires special ability. Nearly every business naturally divides itself into certain departments, and success is obtained by each department being handled by an individual both competent and able to concentrate his efforts along that line. For instance, railroads are divided into freight, passenger and operating departments with an executive in charge of each. Any large mercantile business employs a buyer and a manager of the sales department. A factory has its superintendent and a man in charge of the sales. The National Cash Register Company, of Dayton, Ohio, is recognized as being one of the model factories of the world, for the reason that for years it has not only produced the best cash register ever made, but its sales have several times exceeded the combined sales of all other registers. This company places the factory in charge of a superintendent, and the sales department in charge of a manager of sales agencies. Success has followed. I claim that it is therefore conclusive that all large propositions recognize the importance, in fact the necessity, of separating the producing force from the selling force.

I cannot see where fruit is different, and I believe I can make the assertion without fear of successful contradiction that growing fruit is an industry, and selling fruit, a business; each should have a head, and be operated separately. I feel positive that every grower who has a large orchard, or a small one with diversified products, will admit that the farm in either case requires practically all of his time.

In my line of argument to demonstrate the necessity of an association, it is next necessary to give you some idea of what is required to successfully sell fruit and realize the best prices, the amount of time required and the expense involved. I have associated with me two men competent in bookkeeping and stenography who act as assistants, and the necessary number of inspectors, receiving and shipping clerks, so that my time is entirely free to devote to general marketing and management. I probably

dictate fifty letters a day, and send a dozen telegrams daily, and receive as many more, during the business season. And I assure you that, with nothing in particular to do, I can say truthfully each day, "This is my busy day."

For a manager to successfully market fruit, it is necessary to know daily by wire the condition of every market where he is doing business, or may do business. It is important to know just what varieties are wanted in every city, and in addition essential to be posted from what districts each particular market is supplied, and also when that district begins shipping, the extent of the supply, and the end of its season.

In addition to all this it is equally necessary to be familiar with the standing of each firm you are either dealing with or expect to deal with. This word "standing," in this particular sense, is rather a broad one, and means that you must know a firm's financial standing, and their ability to pay. Their popularity with their trade is also significant, as well as their equipment to do business, and above all perhaps the most important requisite is intimate knowledge about a firm's policy on reporting off condition of fruit and rejecting cars.

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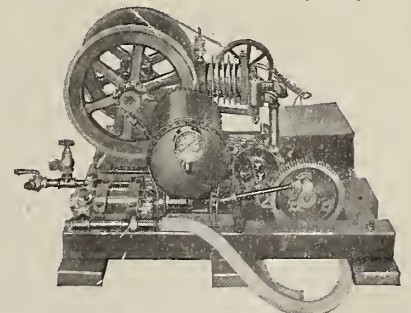
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It has been my personal experience that this volume of necessary information is so large, the time in acquiring it so great, and the expense so heavy, that I say to you frankly that the average orchardist under ordinary conditions can neither spare the time to do it properly nor afford the expense. The facts as stated so far seem to me sufficiently plain to convince any unprejudiced mind of the necessity of associations. However, as an additional clincher on the argument, I want to call your attention to the methods necessarily employed by individuals, or in vogue in districts without associations, and then draw a comparison, that you may form your own conclusions. In such cases a grower must adopt one of two plans in disposing of his fruit—he must either consign (and if he does it must be at random) or he must sell to local or visiting buyers,

without being properly posted, consequently there can be but little certainty of securing results that can be obtained through an association that is properly posted and ably managed. There is an additional uncertainty as to what returns he will receive, and when, and a possibility of one of those "red ink account sales" which you have probably heard about.

Another unfavorable condition frequently arises in the absence of an association that works to the disadvantage of the abler, business-like orchardists, when the smart buyer shrewdly makes his first deal with the uninformed or weak-kneed grower, and closes at a figure below the average market price, establishing a low figure which he uses as a precedent and lever to influence other growers to accept the same. I think every one realizes how difficult it is to secure a certain price when actual sales have been made at lower figures. You know how difficult it is to sell at a dollar when some one else has quoted or sold at ninety cents.

In the years 1900, 1901, 1902, in a district I know of the growers sold a certain variety of fruit at less than a dollar a box. In the year 1903 a union was organized and during the four years since that time the same variety has netted the growers \$2.00 per box and up. In connection with this fact it is also true that during the period when these growers received the lesser price generally the price of apples was higher.

In concluding the first chapter on the necessity of associations, I beg leave to advise you that my argument is not based on theory, but on my opinion deduced from facts, founded on actual operation and experience. If my observations and deductions are correct, and I believe they are, I sincerely hope you will realize the necessity of associations, for I firmly believe the association plan is the sure method for the grower to secure better prices for his fruit.

I feel the local buyers are entitled to a proper consideration. It is not my intention to have you conclude by inference in the presentation of the necessity for organization that private firms are a menace to the orchard industry. I am willing to admit that localities exist where perhaps an association would do well to equal the prices paid by individual concerns. In addition to this, it is only fair in recognition of the fact that competition is the life of trade to say that where a district contains both an association and a local operator such a condition will probably have a tendency to stimulate an eagerness in each to so conduct their business as to obtain and pay growers better prices. The existence of a competitive firm will be conducive in making "the manager" hustle, because unfavorable comparisons are certainly odious. Consequently, I can see no reason why such a combination would not be both stimulative and protective. Each, where both are conducted legitimately and fairly, would afford protection against the other, and be more or less comforting in the way of assurance to the grower. But if you can support but one, be sure that one is the association.

#### BENEFITS

The primary object of business is to make money, and usually to make as much money as possible on the capital invested. Any firm or corporation that is not mutual engages in business for this purpose, and we must admit the legitimacy of this purpose. The object

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[OKANOGAN COUNTY]

of a growers' association organized properly (the basic principles of organization will have consideration a little later on) is just the same as a firm in two particulars, to sell for the best possible price, and conduct the business as economically as possible. In a word, make as much money as possible. The aim of the firm is to make money for itself, and as much as possible. The primary object of the association is to make as much as possible, not for itself, but for its members. This is the essential and important difference.

Where both are properly conducted and managed, the expense should be practically the same, and both should be able to realize nearly the same prices. The firm pays what it receives less the expense and profit for itself; the association pays all it receives less the expense only. If you want this profit, if you need it, or can use it in your business, organize an association and get it. If you don't want it or can't use it, be content with your private firm or your present method, and in your idle hours resulting from a lack of prosperity and progress watch Hood River and other districts with good associations grow.

The association can buy wholesale in carloads, boxes, spray material, paper, and many other orchard supplies, which can be sold the growers at wholesale prices, plus the actual cost of handling, and the actual saving to the grower by this plan is no small item. I know of one association that has saved growers in a year's supply \$1200 on spray material, \$1000 on paper, \$3000 on crates, and \$4000 on boxes.

Lastly, in speaking of benefits, I want to call your attention to the advantages arising through an association office. The Hood River association office has evolved itself, so to speak, into a commercial fruit growers club which has developed into a bureau of information on fruit topics and methods. In the Hood River association office the growers are always welcome, the manager is never too busy to talk (perhaps if he was he might earn his princely salary which he does not get). Every experimental station bulletin pertaining to fruit is received, and every horticultural paper of value taken. The office force is composed of able and experienced men. In this office you can ascertain the formula for any spray, or learn the effectiveness of any brand of spray, or be advised of its efficiency. You can be posted on the market, or learn about the best varieties to grow commercially in our locality. Every newcomer finds the latch string out, and old growers congregate in dozens almost daily for friendly and advisory discussion. Anyone in the office can tell you the tool or implement generally considered best for a certain purpose, where to get it, and the price. In addition to all this, the office is a publicity bureau, a development league, so to speak, for every letter is promptly and fully answered, giving full information on subjects of inquiry.

Such are some of the benefits resulting from an association properly managed, which should again impress upon you the value arising from organization, and in addition convey some valuable suggestions of what an association should be.

For the benefit of those who may be contemplating organization, and as a suggestion for possible improvement of existing associations, I desire to call attention to a few principles involved in proper organization. In the first place, it is a matter of business to make your

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associations just as strong as possible. The proper selection of your board of directors carries conviction of proper management. Your directors should be successful growers, men of good business ability, popular, and recognized as giving every man a square deal. In addition to this, they should be selected so as to represent every locality of the district.

Every association should be organized on the co-operative plan. No association should aim to make a profit for itself, and it should never accumulate a surplus for dividend purposes. All the money received should be paid out to each grower in accordance with the price realized for the grade and variety of fruit as marketed in proportion to the number of packages. If this is done each grower will get the full profits in a just proportion to his variety, grade and quantity, that is, the full price realized less the actual expenses. This is not only just, but should be the basic principle in every fruit growers association. If a profit is made and retained by the association and paid out as a dividend on the stock, you are robbing one grower for the benefit of another, unless each own the same number of shares and market the same amount of fruit in dollars and cents. To illustrate this, which perhaps would make the idea clearer: Suppose two growers each own one share of stock; one ships 100 boxes which sell at \$1.00 a box, and the other 1000 boxes which sell at the same price. The association absorbs 10c per box, and the actual cost of expense is 5c per box. The amount retained from the two growers would be on 1100 boxes \$55.00, and if a dividend was declared according to share holdings each would receive \$27.50; or in other words, your association would be taking \$22.50 from one grower's proceeds to pay the other grower a dividend because he held the same amount of stock.

Stock if possible should all be subscribed by growers. Experience has demonstrated the actual necessity of one other principle that must under no circumstances be overlooked in the organization of a fruit growers association. That is the necessary contract binding each grower's crop annually to the association, or incorporating so that your membership according to your by-laws will bind the crop. While the California court sustained the latter as valid, I prefer the contract. Without this, it is only a question of time when the association will flounder. Without a contract your association will never know what predicament it may be in tomorrow. Without a contract you can not make a bona fide sale. In fact, without it you really have nothing to offer for sale, and therefore are in no position to do business. Of course you may run without contracts for several years, but when the time comes and your association has made sale of the entire crop of any variety of its members, and an advance of price occurs, you can make a ten to one bet that some growers in their eagerness to get the extra price will forget their duty to their organization, jump the game, and a lawsuit will stare you in the face that may bust your union.

This grower's contract is one of the most important basic principles in the organization of the association. It is the corner stone of foundations, the keystone of association structure. So whatever you do, don't omit it. All growers should be required to sign contracts in advance of each season, and not be permitted to do so after an agreed date.

**PRINCIPLES IN MANAGEMENT**

Your manager, as a matter of business, should treat every grower fairly and squarely, without prejudice or favor. Ability, experience, diplomacy, firmness, and a knowledge of fruits and markets are essential business requirements. Your manager must make it his business to put into action such a system of grading, packing and inspection as will enable him to secure a uniform grade on every carload, so that he can guarantee every box in the car, and additionally guarantee that every box is as good on the bottom as it is in the middle, and as good in the middle as it is on top. Arrangements along this line must be perfect if success is expected. The manager must be expected to select his assistants, if you expect to hold him responsible for their work and to give you results.

Finally, when we have a good association in every district, we can organize one grand association, composed of the managers from district associations which can create a harmonious policy that will not only be for the good of all, but a power in the land. I believe the managers here have been called together to take preliminary steps along that line, and that an opportunity will be given us for such discussion.

**DRY FARMING**

THE excellent article on dry farming in this issue is reproduced from an article in *World's Work*, published by Doubleday, Page & Co., of New York City. The article is so instructive and valuable, and so well written that we feel it would be of general interest to our readers, and therefore wrote the publishers and obtained permission to reproduce this article. We trust that every one of our readers will find it interesting, and would say in connection with the article that Mitchell, Lewis & Staver Co., of Portland, are the agents for the manufacturers on the Pacific Coast.

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THE BEST SHIPPER

LOOK GOOD, BUT TASTE BETTER

*Fancy Pack Guaranteed*

FRUIT GROWERS UNION  
HOOD RIVER, OREGON

## FRUIT FACTS

Chelan County won 35 gold medals on fruit at the Portland Exposition. This record was not equaled by any county on the Pacific Coast.

Shipments last year aggregated 1,000 cars. We will have more this year and still more next.

Fruit noted for flavor and keeping qualities. No worms.

We will have fifty cars of fancy Spitzenbergs and Newtowns this season.

Eighty per cent of fruit raised in Wenatchee, Entiat and Columbia Valleys will be shipped by the

WENATCHEE VALLEY  
FRUIT GROWERS' ASSOCIATION

*Headquarters at Wenatchee,  
the Big Red Apple Metropolis*

## PRUNING FRUIT TREES

Continued from page 6

and thinning out of the branches would largely correct these faults, and make it possible for the trees to bear annual crops of fine fruit.

But one should become well acquainted with the habit of growth of different varieties as a few kinds grow slowly and will not bear heavy pruning. Others are erect growers and some are spreading. One cannot expect to entirely overcome such tendencies but they may be corrected to a marked degree. The upright varieties may be spread somewhat by pruning to the outside laterals and the spreading kinds may be contracted by cutting to those which have an inward direction. And by cutting back the vigorous growths each season, those two feet and over in length the limbs are made stocky, thus in a great measure doing away with dropping branches. However, we believe, that under our conditions, it is advantageous in many ways to keep trees from becoming very tall. This can only be done by intelligent annual pruning. In Plate II. is shown a photograph of a successful young Colorado orchard that has been severely headed in.

You should patronize our advertisers, because they patronize us, and support this paper, and by doing so enable us to give you a first class paper, which we hope will be better every issue.

Your orders will receive prompt attention if you mention to our advertisers, that you saw the advertisement in "Better Fruit."

## Canadian Fruit Leads in the British Markets

because of the excellent government regulations regarding packing. If you desire to keep in touch with Canadian fruit growers, subscribe for

## The Canadian Horticulturist

OF TORONTO, ONTARIO

It is the only fruit paper published in Canada and is the official organ of the Ontario, British Columbia, Quebec, and Prince Edward Island Fruit Growers Associations. Subscription rates, 50 cents a year; four new subscriptions for \$1.00; three years subscriptions for \$1.20. Write for sample copies.

## FOR HIGH PRICES AND FRUIT WORTH THE MONEY The DAVIDSON FRUIT CO.

*of Hood River, Oregon*

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PACKERS AND SHIPPERS

During the past thirteen years we have built up a reputation for quality that has enabled us to handle crops grown by members of the Local Union as well as other growers, at price above what they could otherwise secure.

Our mission is to give the growers good prices, and the buyers fruit of such quality as will enable them to make satisfactory profits.

Our specialties are APPLES and STRAWBERRIES, but we handle all kinds of fruits grown in this section, including Pears, Plums, Cherries, Blackberries and Raspberries. If you are a buyer write us. If a grower call and see us, or telephone Main 71.

DAVIDSON FRUIT COMPANY

# LIKE HONEY DEW IS THE HIMALAYA BERRY

Coreless and rich, they literally melt in your mouth—  
You can have them in your garden at almost no cost

It's black, but not a blackberry. It's a new arrival, from the north slope of the Himalaya mountains. For many centuries the natives of mysterious Tibet have been making wine and cordial of them, and only the recent invasion by British troops of the "Roof of the World," as this quaint land is called, has brought this delightful, luscious fruit to our civilization.

Enormous clusters of large-sized berries ripen all summer on this bush, making the Himalaya the most productive of any variety known. The flavor is sweet and of unusual richness. They have no core, and when ripe they literally melt in your mouth.

### JELLS EASILY

For pies and jellies the Himalaya berry is a perfect success, being ahead of any similar fruit. It jells easily, and either fresh or cooked is good for

the sick, being an excellent regulator and having tonic and medicinal properties of unusual virtue.

The severity of their native climate has made the berries hardy, and both the plant and the fruit will stand extremes of heat and cold better than will our domestic fruits.

### WILL BE THE FAD

It will be hard for you to realize what a treat is a dish of these new berries. They will be all the fad after they get to be better known and enough are grown in the United States to supply the demand.

Now is the time to plant, and you will have a crop of berries next season. Three bushes will produce all the berries a family can eat.

We have a limited supply of pot-grown roots—hardy plants with lots of fibrous roots—not suckers, but well-grown, well-developed specimens. If you want to be the first in your

neighborhood to have Himalaya berries, order now.

### PRICE

(Prepaid) Per root, 25c; three for 50c; per dozen, \$1.00.

Use this Coupon.

Fill out and mail to

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Enclosed is \$..... (in money order, draft, 2c stamps) for which send me (prepaid) ..... Himalaya Berry Roots. Please send me (free postpaid) your Plant and Seed Catalog. Name ..... Address ..... BF1



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SELECTED BY ME DURING MY RECENT VISIT TO FRANCE

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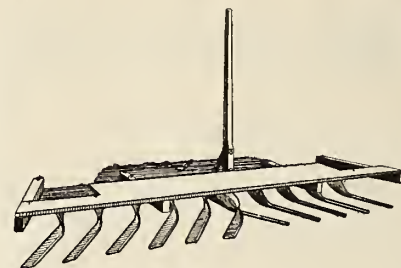
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TRUMAN BUTLER, Cashier

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Incorporated 1905

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HOOD RIVER, OREGON

Capital Fully Paid \$50,000

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April 4, 1901 . . . \$ 36,741.73	April 4, 1904 . . . \$140,866.60
April 4, 1902 . . . 69,530.57	April 4, 1905 . . . 160,031.71
April 4, 1903 . . . 128,481.75	April 4, 1906 . . . 281,042.83

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## LIST OF FRUIT GROWERS UNIONS AND HORTICULTURAL SOCIETIES

**W**E publish free in this column Society, with the name of their organization or Horticultural the name of any Fruit Growers secretary or manager. Secretaries and managers are requested to furnish particulars if omitted, for future publication.

### Oregon

Oregon State Horticultural Society—E. R. Lake, Secretary, Corvallis.  
Forest Grove Horticultural Society, Forest Grove—Col. Harry Haynes, Secretary.  
Clackamas Horticultural Society—J. C. Zinzer, Secretary, Oregon City.  
Mosier Horticultural Society—A. P. Bateham, Secretary, Mosier.  
Medford Horticultural Society—L. B. Brown, Secretary, Medford.  
Hood River Horticultural Society—J. L. Carter, Secretary, Hood River.  
Marion County Horticultural Society—E. C. Armstrong, Secretary, Jefferson.  
Linn County Horticultural Society—F. M. Mitchell, Secretary, Albany.  
Polk County Horticultural Society—R. L. Chapman, Secretary, Dallas.  
Yamhill County Horticultural Association—W. H. Kingery, Secretary, McMinnville.  
Medford Fruit Growers Union—Medford.  
Ashland Fruit and Produce Association.  
Grants Pass Fruit Growers Union—Chas. Meserve, Secretary, Grants Pass.  
Hood River Fruit Growers Union—E. H. Shepard, Secretary and Manager, Hood River.  
Hood River Apple Growers Union—E. H. Shepard, Manager, Hood River.  
Grande Ronde Valley Fruit Growers Union, La Grande, Oregon—E. Z. Carbine, Secretary.

### Idaho

Southern Idaho Fruit Shippers Association—C. J. Sincel, Secretary, Boise.  
New Plymouth Fruit Growers Association—A. R. Ingalls, Representative, New Plymouth.  
Payette Valley Apple Growers Union—J. A. Bower, President, Payette.

### Washington

The Thurston County Horticultural Society—C. D. Sullivan, Secretary.  
Waterville Horticultural Society—Ben Spear, Secretary, Waterville.  
Yakima County Horticultural Society—E. E. Samson, Manager, North Yakima.  
Spokane County Horticultural Society—L. G. Monroe, Secretary, Spokane.  
Snohomish County Horticultural Association—C. L. Clemens, Secretary, Snohomish.  
Sultan Horticultural Society, Sultan—Thos. Musgrove, President.  
Kennewick Fruit Growers Association—W. S. Jenkins, Manager, Kennewick.  
Wenatchee Fruit Growers Union—E. D. Balch, Secretary, Wenatchee.  
Puyallup and Sumner Fruit Growers Association—W. H. Paulhamus, Manager, Puyallup.  
Vashon Island Fruit Growers Association—C. J. Prior, Secretary, Vashon.  
Mt. Vernon Fruit Growers Association—J. E. Perin, Secretary, Mt. Vernon.  
Spokane Fruit and Vegetable Growers Association—Spokane.  
White Salmon Fruit Growers Union—Carl Ross, Manager.  
Thurston County Fruit Growers Union—Fred W. Lewis, Secretary, Tumwater.  
Bay Island Fruit Growers Association—H. McGavick, Manager, Tacoma.  
Whatcom County Fruit Growers Association—J. H. Kirkpatrick, President, Curtis.  
Yakima Valley Fruit and Produce Growers Association—J. F. Snyder, Granger.  
Sunnyside Fruit Growers Association—Sunnyside.  
Buckley Fruit Growers Association—J. B. Frost, President, Buckley.  
Lewis River Fruit Growers Union—Woodland.

### Colorado Fruit Associations

San Juan Fruit and Produce Growers Association, Durango, Colorado, and Farmington, New Mexico—J. M. Kingsley, Manager.  
Fremont County Fruit Growers Association, Canon City—Geo. Sailey, Manager.  
Rocky Ford Melon Growers Association—A. C. Sloan, Secretary, Rocky Ford.  
Plateau and Debeque Fruit, Honey and Produce Association, Debeque—H. A. Stroud, Manager.  
Montrose Warehouse (shipper of fruit)—Robert Halley, Manager, Montrose.  
Surface Creek Fruit Growers Association, Austin.  
Longmont Produce Exchange—R. D. Jenkins, Manager, Longmont.  
Manzanola Fruit Association—Ed McClain, Secretary, Manzanola.  
Delta County Fruit Growers Association—Geo. Conklin, Manager, Delta.  
Boulder County Fruit Growers Association—E. T. Carr, Manager, Boulder.  
Fort Collins Beet Growers Association—Chas. R. Evans, Manager, Fort Collins.  
La Junta Melon and Produce Company—J. O. Wood, Secretary, La Junta.  
Rifle Fruit and Produce Association—Rifle.  
North Fork Fruit Growers Association, Paonia, Colorado—W. H. Garvin, Manager.  
Fruita Fruit and Produce Association—E. J. Dalton, Manager, Fruita.  
Grand Junction Fruit Growers Association, Clifton, Palisade, Grand Junction—J. F. Moore, Manager.  
Palisade Fruit Growers Association—Geo. Scroggins, Manager, Palisade.  
Independent Fruit Growers Association—Grand Junction—Ferbrache, Manager.  
Peach Growers Association, Palisade.

### Canada

British Columbia Fruit Growers Association—W. J. Brandrith, Secretary, Ladner, British Columbia.  
Georgian Bay Fruit Growers Association—J. G. Mitchell, Secretary, Thornbury, Ontario.  
Ontario Fruit Growers Association—P. W. Hodgetts, Secretary, Toronto, Ontario.  
Quebec Fruit Growers Association—Dr. W. H. Wood, St. Johns, Quebec.  
Nova Scotia Fruit Growers Association—S. C. Parker, Secretary, Berwick, Nova Scotia.  
Prince Edward Island Fruit Growers Association—A. E. Dewar, Secretary, Charlottetown, Prince Edward Island.

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and ALL LEAF-EATING INSECTS SPRAY WITH

# Swift's Arsenate of Lead

IT IS WHITE & IT STICKS

Ordinary Rains will not wash it off. No matter how strong it is used, there is absolutely no danger of burning or scorching.

After investigating results obtained with Swift's Arsenate of Lead in California and Colorado, a few Hood River growers decided to try it in 1905, and we used about 2000 pounds. Those who did had the cleanest crop they ever had with far less stung apples than their neighbors who used other formulas. In a word, the result was so satisfactory that every grower in Hood River Valley is using it this year. We used 2000 pounds in 1905 and a carload in 1906.

E. H. SHEPARD, Manager,  
Hood River Apple Growers Union.

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Daylight Trip across the Cascade and Rocky Mountains  
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A SPECIALTY

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CIVIL AND ARCHITECTURAL  
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Make surveys, plans and estimates for sewer, light and power and railway plants, and furnish, subject to approval, plans, specifications, and estimates for all classes of buildings—public, private and mercantile. Special attention given to economic and slow-burning construction. Accuracy and economy guaranteed.

Davidson Bldg. Hood River, Oregon

## DOINGS OF FRUIT GROWERS OF THE PACIFIC NORTHWEST

FRED PRITCHARD, of Pritchard & Company, Liverpool, speaking of the prospects regarding the apple market in England, stated that there is a good market at the present time for number one fruit. There is considerable number two stock on the market, but good results must not be expected on that quality of fruit. It is almost useless to ship anything but the very finest fruit abroad. Golden Russets and Winesaps he considers in a class by themselves, and expects that they will make good money. He estimates apples in cold storage as follows: Province of Ontario, 250,000 barrels; Nova Scotia, 200,000 barrels; Maine and New Hampshire, 250,000 barrels. There are also considerable holdings in Western New York, and in the Western States, but a large percentage of those are expected to turn out number two stock. The number one stock will be in sufficient supply to keep the market at a normal range of prices for some time to come. Idaho box apples were sold readily at from \$1.50 to \$2.00 per box in New York.

THE Yakima County Horticultural Union has at the present time about 10,000 boxes of apples stored away in their warehouse. The bulk of the apples are Ben Davis. The apples were held for higher prices, and at the present time are expected to bring from 90c to \$1.00 per box. Yakima Valley shipped a good many apples this season to Montana and California, besides supplying the Sound country for home consumption, and for the Alaska trade. E. E. Sampson, manager of the union, is being offered now from \$1.50 to \$1.75 for Spitzenbergs, Winesaps and Newtown Pippins, but is holding for higher prices. Mr. Sampson finds that apples this season, on account of the long hot summer, are ripening earlier, and for that reason will have to be disposed of soon. Between 30,000 and 40,000 boxes of apples are being held in the Yakima Valley for spring trade.

THE Weber-Bussell Canning Factory, at North Yakima, Washington, has been a great help to that community this season. This is their first year in Yakima, and the fruit growers feel the benefit of the cannery. The cannery disposes of a great deal of fruit that would otherwise have to go to waste. At the time of the flood, when no fruit could be shipped out, the cannery was taking care of a good deal of perishable goods. At the present time the warehouse is filled from floor to ceiling with canned apples, peaches, pears, cherries, plums, as well as canned pumpkin and tomatoes. About 600,000 cans are now ready for shipment, this fruit being shipped to all quarters of the United States.

INSPECTOR EVANS, of Umatilla County, Oregon, reports the value of fruit shipped from Umatilla County as follows: Apples, 18,000 bushels, 61c, \$11,500; peaches, 7,500 bushels, 75c, \$5,625; pears, 2,000 bushels, \$1.00, \$2,000; prunes, 200,000 pounds, 3/4c, \$15,000; berries, 15,000 crates, \$1.50, \$22,500; grapes, 2,000 bushels, 50c, \$1,000; tomatoes, 10,000 bushels, 34c, \$2,875; total, \$60,000.

MORDECAI JONES, of Husum, Washington, has ordered 2000 apple trees, mostly of the Newtown variety, which he will set out next spring.

THE Woodburn Nurseries, of Woodburn, Oregon, delivered \$1,200 worth of nursery stock to different points in the Willamette Valley last month. The trees were of a general assortment, a large portion being English walnuts. A \$12,000 order of nursery stock was delivered in Jackson County about the same time. The first carload of nursery stock valued at \$10,000 was received at Medford, Central Point and Ashland from the same company two weeks ago. The Western Orchard Company alone will receive 28,000 trees, which in round numbers are valued at \$4,000. A good deal of that stock will be pears.

LA SELLE BROS. & CO., of Albany, Oregon, have completed shipping the season's output of dried prunes, amounting to about 100 cars. They packed about 4,000,000 pounds of prunes, at a value of \$200,000. Their output is about one-fourth of the entire output of the Northwest. Their plant in that city gives employment to about eighty-five men and women, and their pay roll during the prune season amounted to about \$10,000. A good deal of their fruit was shipped direct to Liverpool.

THE Parr-Simmons Company, of La Grande, Oregon, are right in the midst of their apple packing. A large force of packers is busy at their warehouse, and will have the bulk of the crop packed out at the end of the year, providing enough cars be secured to move the crop rapidly.

J. I. JONES, of Cottage Grove, is planting a large tract of orchard land this season. He has already planted 1250 Spitzenberg and Newtown Pippin trees, and expects to plant about 500 more.

## WINTER AND SPRING BLOOMING BULBS

Hyacinths, Tulips, Narcissus, Crocus, Etc. Now is the time to plant. Send for our catalogue of Bulbs and Roses.

CLARKE BROS.  
PORTLAND, OREGON

## APPLES

CHERRIES, PEARS, PRUNES

Our cool climate produces firm, beautiful Apples, which, for long keeping, cannot be excelled, if equalled; in flavor second to none.

*We guarantee every package to be just what is claimed for it.*

GRAND RONDE VALLEY  
FRUIT GROWERS UNION  
LA GRANDE, OREGON



THE Harriman system has incorporated at Salt Lake City, Utah, the Pacific Fruit Express Company, with a capital of \$12,000,000. The company expects to build and operate its own refrigerator cars on its system, as well as operating cold storage plants along the line. With the increased acreage of fruit in the Pacific Northwest special help will have to come from some quarter to take care of the immense fruit shipments in the near future.

H. S. GILE & CO., of Salem, Oregon, have made a trial shipment of a carload of Oregon pears grown on the Wallace orchard, to England. The fruit arrived in London in excellent condition, and brought good prices. Some of the varieties are selling as high as from \$1.65 to \$2.20 per half box.

CHRIS. POWELL, of Perkins, Idaho, was fined \$25.00 in Justice Savidge's court for selling apples infected with San Jose scale. Mr. A. F. Hitt, the State Horticultural Inspector, caused the arrest of Mr. Powell, and the result shows that the State of Idaho intends to enforce its horticultural laws.

A. P. BATEHAM, of Mosier, Oregon, shipped five carloads of apples the last week in November. The apples run unusually large, a large percentage being 54 to the box. One car shipped the first part of the week will net something like \$1.113.

TEN acres of the Arthur Kayler farm of South Molalla, Oregon, has been selected as one of the tracts where the State of Oregon will demonstrate the growing of apples.

### *London & Lancashire Fire Insurance Co.*

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Capital . . \$15,000,000

Surplus in U.S. 1,149,000

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This sterling English Company paid \$6,732,269 losses in San Francisco

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OF HARTFORD, CONN.

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This Company paid \$1,331,294 to its Policy Holders in San Francisco

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THE above payments at San Francisco are more than those of any other affiliated companies, with one exception, and the saving from claims as filed was only 7 per cent, which is far below the average

JAMES WYPER, Manager Pacific Coast Branch

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AND ONE YEAR'S SUBSCRIPTION TO BOTH

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It is a practical magazine edited by farmers or those who have been farmers. It is especially valuable in the farm "home" and is beautifully printed and magnificently illustrated like all publications issued by Doubleday, Page & Co.

The subscription price of FARMING is one dollar, and the subscription price of BETTER FRUIT is one dollar, but if you will subscribe at once on the coupon below, we will give you a year's subscription to both magazines for \$1.75 and in addition give you a

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fully paid for one year without any dues or assessments of any kind. The policy is an exceedingly generous one, covering a wide range of risks, including death or injury on railroad trains and other public conveyances, elevators, trolley cars, etc.; also, accidents on the high road, from riding or driving, automobiles, horses, etc., burning buildings, hold-up, drowning, bicycle accidents, etc.

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will be paid for a number of weeks if you are disabled in any way described in the policy. You can have the magazines and the policy sent to different addresses if you desire.

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I enclose \$1.75 in \_\_\_\_\_ for which send FARMING one year, "BETTER FRUIT" one year, and the ACCIDENT INSURANCE POLICY for \$1000.

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Better Fruit—A Wagon Load of Mail. Mailing the November Edition, 5000 Copies, before Five Months Old

## BETTER FRUIT HOOD RIVER, OREGON

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF UP-TO-DATE PROGRESSIVE FRUIT-GROWING & MARKETING

ALL COMMUNICATIONS SHOULD BE ADDRESSED AND REMITTANCES MADE PAYABLE TO THE BETTER FRUIT PUBLISHING COMPANY

E. H. SHEPARD AND E. A. FRANZ  
EDITORS AND PUBLISHERS

SUBSCRIPTION PRICE \$1 PER YEAR  
IN ADVANCE IN THE UNITED STATES & CANADA  
FOREIGN SUBSCRIPTIONS, Including Postage, \$1.50  
ADVERTISING RATES FURNISHED ON APPLICATION

THE finishing touch in realizing fancy prices after having grown a fancy quality, graded it properly, and packed it right, is adding to the external appearance of the package. Nothing accomplishes more along this line than a label. Labels should not only be handsome and artistic, but should correctly reproduce so far as possible a color true to nature. The label should show the fruit in its exact size also. It is not only poor taste to exaggerate the size, but a misrepresentation. Such exaggerations create disgust. Misrepresentations in size on a label have a tendency to affect the confidence the dealer places in the shipper, and causes the consumer to lose confidence in the brand. Fruit dealers advise me that an attractive label assists very materially in quick sales and better prices. On the label should be printed the name of the state and the locality where grown in addition to the name of the shipper or association.

WE present this view showing a wagon load of mail, 5000 copies being sent out to the postoffice before the publication was five months old, for the purpose of showing the importance "Better Fruit" is assuming. It also indicates the volume of appreciation in addition to the valuable instruction furnished through its columns. "Better Fruit" is itself a development league. The hundreds of copies sent East monthly, with subscribers in twenty-five states, are accomplishing much in the way of exploiting work and will undoubtedly assist materially in bringing settlers from the severe climates of the East where getting bread and butter is a strife, to the wonderful Northwest, with its magnificent climate, where a fortune awaits every man willing to work, possessed of average ability, and moderate capital, who wishes to engage in the industry of growing fruit.

WE have just received a copy of J. F. Littooy's booklet on Early Tomato Culture, and wish to state to all growers of tomatoes that we consider this a very instructive booklet on the subject as indicated in the title. We believe it is a booklet that every one engaged in growing tomatoes should possess and read. The price is 25c, and copies can be secured from J. F. Littooy, the author, Wenatchee, Wash.

ONE association not long ago was offered 25c per box extra providing they would not label their fruit, or allow their label to be covered up. Today that brand is bringing the fanciest money that is being realized in the European market. And the growers are thousands of dollars to the good.

THE illustration of the Weber-Bussell Cannery at Puyallup is given in this edition, to show the importance of a cannery to all fruit-growing districts. This cannery paid the berry growers of that district over \$7000 in one week for berries that were not in condition to be shipped. We present this view now for the purpose of calling your attention to the fact that in winter while growers have spare time, they should take steps towards establishing a cannery plant with a view of having it ready for operations next season.

REFERRING to the view of W. J. Perkins' orchard, we desire to call attention to the fact that \$3429.00 is the highest price ever realized for a car of fruit. It certainly should be an object lesson to an Easterner who cannot afford the price, to come west where land can be purchased at \$100 per acre and up that will produce 300 boxes and more of fruit, according to the age of the orchard, that sold for \$7 per box.

IN another part of this edition is an illustration of the peach orchard owned by Keeley & Dubois. The trees are nine years old, twenty-nine feet through the center. The average number of boxes per tree was thirty-five. The thrift of the orchard, as indicated in the picture, the enormous yield, the excellent quality of the fruit, and the splendid prices realized is evidence that peach growing in the State of Washington is a prosperous business.

EVERY district that wishes to secure better prices should begin at once to build up a reputation by stating on the end of the package the locality where the fruit was grown.



# A FATAL MISTAKE

is made by those who cling to old methods in marketing the products of their fields and orchards. Conditions are changing, new business methods are being adopted. *A revolution is at hand* and we wish to call the

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to the part we are taking in bringing about a better system and in building up a National Trade and Credit organization for their assistance and protection. We furnish this through two channels.

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Signed .....

City .....

State .....

# Orchards!! and Orchards?

## *The False Economy of Selecting Cheap Trees*

Quality must absolutely be placed first if you are to make a success of your orchard. Many a man preparing to plant an orchard or even a few trees, looks so long at the few cents difference between first-class stock and the unknown or questionable kind, that he entirely overlooks the immense difference in returns to follow. One good apple to a tree will often pay the difference between the cost of high grade stock and the cheap sort.

The Washington Nursery Company's plant is on the Yakima Indian Reservation where clean trees are grown in the finest soil in the world, miles removed from any old or pest-ridden orchard. Their selection, planting, budding, grafting, cultivation, packing and shipping are under the personal supervision of Mr. A. W. McDonald, who is recognized as one of the most thorough nurserymen in the trade.

The one-year-old tree on three-year-old root grown by the Washington Nursery Company is larger than the two-year-old sold by Eastern firms. The fertile soil and careful cultivation produce a root of large proportions which sustains and nourishes a vigorous growth of the top the first years of life going into wood instead of fruit, hence when bearing begins the third year there is ample body to sustain a heavy crop.

The quick growth produced by "knowing how" starts early in the spring and continues till about August 15th, after which the sap hardens, the leaves ripen, and the trees are ready for the necessary handling and transplanting.

The farmer or orchardist, if planting for himself, wants nothing but the best, hence if he is wise he ignores the few cents first cost of the tree when he considers that as soon as planted it is worth a dollar, and increases in value at that rate yearly.

If he is planting an orchard to sell at once, he cannot afford to take a chance on unknown or unreliable stock, for the first question the prospective buyer asks is "what kind of trees have you, and where did you get them?"

Mr. F. A. Huntley, State Horticultural Commissioner, of Tacoma, expressed himself as follows at a recent convention:

"The fruit grower is striving to improve the standard of quality in his products. He sees the necessity of eliminating the pests, and to that end adopts every improved remedy. The best methods of pruning and training receive careful attention. He cultivates, and irrigates when necessary. Yet when it comes to the selection of nursery stock, fruitgrowers too often display poor judgment. A catalogue price usually denotes a live tree. This is not enough, and the planter is largely to blame. The question should not be how cheap, but how good. Quality should be the governing principle. Nurserymen will furnish what is demanded of them by discriminating buyers, but 'cull' prices are often worked in the nursery trade the same as in fruit traffic. High standards in every line pertaining to horticulture must ultimately prevail."

A more concise statement of facts touching on the present subject could not well be put into words, and we commend the above to the careful consideration of prospective buyers of nursery stock.

Write us for particulars as to varieties, nearest agents, etc., or if convenient, call and inspect the plant.

**Largest stock of Home Grown Fruit Trees and Ornamentals in the Pacific Northwest.**

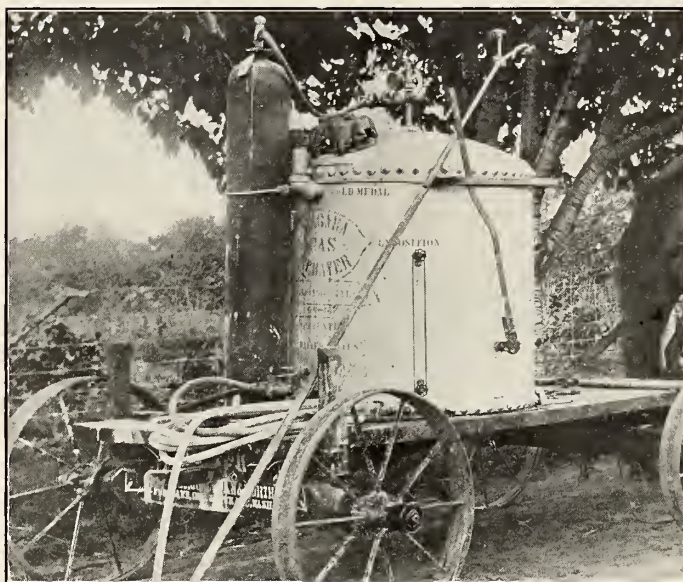
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8:50	TROUTDALE .....	5:25
9:12	BRIDAL VEIL .....	5:02
9:41	BONNEVILLE .....	4:32
9:53	CASCADE LOCKS .....	4:20
10:06	WYETH .....	4:06
10:33	HOOD RIVER .....	3:40
10:45	MOSIER .....	3:28
11:20	THE DALLES .....	3:00
11:59	Arrive BIGGS .....	Leave 12:15

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One year old top on  
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You do not pick \$3.00 a box apples from small, scrubby, inferior trees. You must plant the best tree obtainable to get best results. If you are in the market for trees, it will pay you to investigate our stock before buying elsewhere

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